Attachment 2

Risk-Based Oil and Gas Pit Guidance in Utah

Current Bureau of Land Management (BLM) handbooks, manuals, Onshore Oil and Gas Orders (OOGOs), policies and guidelines address oil and gas pits in a general manner. This pit closure policy seeks to provide consistent minimum standards to address the management of fluid minerals exploration and production wastes in an acceptable permitting, operation, and closure of waste pits, without unduly limiting the ability of BLM Field Offices (FOs) to tailor their authorizations and decisions to circumstances unique to their offices or an individual situation. A primary goal of this guidance is to insure contaminated sites are remediated to the extent necessary to protect the public from unacceptable risks potentially caused by exposure to contaminated media. The guidance in this policy is based upon the framework developed by the BLM Wyoming State Office in IM No. WY-2012-007, which was vetted though the Washington Office (WO). Furthermore, guidance in this policy follows a risk-based decision making (RBDM) process and has been drafted in cooperation with the Utah Division of Oil, Gas and Mining (UDOGM) to provide operators in Utah with consistent and non-duplicative requirements. The level of information necessary to determine the risk classification of a site will vary on a site-by-site basis depending on the nature and extent of contamination, site geology, hydrogeology and site proximity to receptors. Comparing the analytical results to the risk-based screening levels (RBSLs) will aid in selecting the appropriate mitigation strategy. Federal and state rules and regulations must be followed by respective agencies. However, where federal or state guidance is lacking, this cooperative policy will be followed.

A pick-list of sample Conditions of Approval (COAs) is included in this IM (see Attachment 3). These sample COAs are not all-inclusive, but provide a standardized list of protection measures and requirements consistent with this policy. Additional selected COAs may be attached to authorizations (such as APD approval or a water disposal sundry notice) processed by the BLM or by the operator as an applicant-committed measure. Attachment 4 outlines sampling procedures and analytical testing requirements for cleanup and final closure approval, as well as risk-based contaminant thresholds. Attachment 5 is an Excel worksheet to be used in assessing pit lining criteria and cleanup levels (UDOGM Environmental Handbook), with a flowchart outlining closure process steps. Attachment 6 details the BLM/UDOGM Pit Solidification and Stabilization Policy requirements, while Attachment 7 addresses disposal of radioactive wastes.

1. *Use of enclosed tanks and/or closed loop or semi-closed loop systems*

   Closed tanks and semi- or closed-loop drilling systems are encouraged by the BLM since they minimize waste and fugitive emissions that can affect air quality; they discourage entry by wildlife and are environmentally preferable to the use of open pits. In addition, the use of tanks instead of pits expedites the ability to complete interim reclamation and may also reduce costs, particularly when the pit requires solidification or netting. Onsite burial of cuttings produced from a semi or closed-loop system may be allowed only after a review of contaminants present and assessment of potential impacts. Open production pits will no longer be authorized.

2. *Siting and construction of pits*

Wherever possible, the BLM or UDOGM Authorized Officer (AO) should avoid approving pits located in sensitive areas or other locations that have heightened potential to result in adverse impacts to either human health or the environment, such as areas with shallow ground water. Additional siting guidance is provided by UDOGM in the Environmental Handbook, Version 1.0, pgs. 21-26, (https://fs.ogm.utah.gov/pub/Oil&Gas/Publications/Handbooks/env_handbook.pdf) and Utah Oil and Gas Conservation Rule R649.

a. Within Sensitive Areas[1], the AO will require that an alternative to open reserve, completion and production pits be used, see Sections 2(f) & (g), below. Pit lining and cleanup criteria will be calculated using the worksheet in Attachment 5. Exceptions may be granted in rare cases when sufficient protections are described in an engineered facility design, detailed NEPA analysis has been completed, and subsequently submitted for the AO's approval. When exceptions to this policy are granted, the BLM or UDOGM will employ more stringent operation, closure and monitoring standards.

b. Pit construction and design criteria

i. Wherever possible, all pits shall be located entirely in cut material; where not possible, pits shall be located at least 50 percent in cut, and shall include in their designs at a minimum a 2-foot keyway trench for construction of the dike. This dike shall be compacted in 6-inch lifts.
ii. All pits shall be designed to allow at least 3 feet of fill over the top of pit contents upon closure (5 feet of fill for agricultural land), and allow for the re-establishment of the approximate original contour upon final reclamation.
iii. The design of all pits shall provide adequate storage capacity to maintain at least 2 feet of freeboard; unlined pits that will hold uncontaminated fluids must include a permanent marker designating the level at which 2 feet of freeboard remains in the pit. If lined, the permanent marker must not impair liner integrity.
iv. Pads and pits shall be sited and designed to divert offsite run-on. Run-on water may be diverted around the pit by sloping the pad or constructing diversion ditches or berms above and/or below the pad cut slope.
v. Pit walls must be sloped so that the stability of the pit wall is not compromised; generally pit walls will not exceed a 1:2 slope inside and 1:3 slope outside.
vi. During drilling operations, the reserve pit will be fenced on three sides. As soon as drilling operations are complete the fourth side will be fenced. Minimum standards for fencing are provided in the BLM-USFS

[1] Definitions are provided in Attachment 1 and calculation criteria in Attachment 5

publication "The Gold Book"[2], H-1741-1 ("Fencing") and WO-IM-2013-033 Fluid Minerals Operations – Reducing Preventable Causes of Direct Wildlife Mortality.

vii. Re-entering a closed or reclaimed pit is prohibited unless the following protection measures have been approved by the AO:
    1. Disturbed pit contents are removed and transported to an authorized commercial disposal or treatment facility, or
    2. Disturbed pit contents are protected on-site by
        a. Placing all excavated material on an impervious secured liner inside bermed containment,
        b. Preventing wind or water erosion of excavated materials,
        c. Testing pit contents to determine potential hazards, and
        d. Replacing all excavated pit contents upon cessation of operations.

    If wastes are released during re-entry of a previously closed pit, the operator risks causing a release of materials that are no longer Resource Conservation and Recovery Act (RCRA) E&P exempt.

c. Water quality protection measures

i. All pits in Sensitivity Levels I and II shall be lined with the exception of: 1) flare pits; 2) situations where only fresh water, cement, and nontoxic or nonhazardous muds and additives are being used for drilling, completion, and plugging activities; and 3) pits for pneumatic (air) drilling.
ii. The Sensitivity Level will be calculated using the Pit Lining Criteria worksheet in Attachment 5.
iii. Synthetic liners must be of adequate thickness, e.g. a minimum of 12 millimeters (mils) thick, and be compatible with the pit contents, be resistant to weathering, sunlight, puncturing or tearing, and be approved by the AO. Seams of liners shall be overlapped and welded in accordance with manufacturer's requirements. Synthetic liners for pits servicing multiple wells per pad must meet higher standards due to recurrent activity and longevity of use.
iv. The AO may require bedding material or felt under the liner to ensure that the liner will not be punctured during installation or use. Liners must be bedded upon a suitable substrate that is level, free of organic material, rocks or materials that could puncture the liner.
v. Leak detection is required by Onshore Oil and Gas Order No. 7 for all lined produced water pits. Produced water may be used for dust suppression dependent upon chemical constituents and concentrations. A discharge permit from the Utah Department of Environmental Quality and approval by the AO are required.

[2] Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, 2007 (4th Edition), or most current edition

d. Number and type of waste pits

    i. Wherever feasible, pit management should allow for the recycling and/or reuse of fluids in accordance with the transporting requirements of this policy. This may require, for example, that drilling fluids are removed from a pit prior to the flow-back of completion fluids to that pit.
    ii. The AO may require either consolidated or separate reserve/completion pits in the design of a drilling location; see Section 3(d).
    iii. When a proposal includes the use of oil-base muds, either a lined drill cuttings pit, that is separate from the reserve pit, or a semi- or closed-loop system must be used.

e. Pit centralization

    i. Where feasible, centralized completion/stimulation pits or tanks are encouraged. However, the fluids and mixed wastes from the centralized pits or tanks should be recycled, with solids being buried on lease or within a unitized or communitized area, or disposed of/treated at an authorized commercial disposal or treatment facility. The provisions of this section do not apply to reserve or completion pits servicing multiple-well pads, or wells with completion zones in both Federal and non-Federal leases.

f. Alternatives to reserve, oil-base mud, or completion pits

    i. As previously mentioned in Section 2(a), alternatives to reserve, oil-base mud, or completion pits are required when operations are proposed in sensitive areas. Using these alternatives in non-sensitive areas is also encouraged by the BLM. However, the potential drawbacks to their use such as increased disturbance acreage to accommodate storage tanks, or the final disposition of wastes generated, should be considered. Alternatives include:
        1. Closed-loop drilling
        2. Semi-closed loop drilling
        3. Completion flowback to temporary storage tanks

g. Preferred alternatives to open production pits

    i. Below-grade enclosed tanks for storage of produced fluids may be allowed if designed to the following standards:
        1. For single-walled tanks, the sides must be visible for inspection and leak detection must be employed.
        2. For double-walled tanks, the interstitial space must be fitted with leak detection, such that a leak would be detected prior to release from the tank.

3. All below-grade tanks must include a monitoring and reporting plan to ensure that leaks are promptly detected and reported to the AO.
4. Open-bottom sub-grade structures will no longer be authorized.
5. Below-grade tanks are prohibited in sensitive areas.

ii. Above-grade tanks for storage of produced fluids must adhere to the following standards:
1. Secondary containment storage around the tanks for spill control must be capable of holding at least 110% of the volume of the largest tank inside the containment area.
2. The containment system must be capable of containing the wastes or product such that the material will not escape the containment system prior to cleanup.
3. Secondary containment structures shall be protected from livestock, wildlife or human activities. This may be accomplished by fencing, graveling over earthen berms, expanded metal or grate covers, etc.

h. Monitoring, inspection, and enforcement

i. The AO will require the operator to regularly inspect pit liners to ensure that the liner has been properly installed and remains intact throughout operations.
ii. Where present, secondary containment of above-ground storage facilities should be inspected, at minimum, during the first interim reclamation (IR) inspection.

3. Management of pits during drilling and production operations

a. Where necessary to protect public health and safety, or to prevent adverse environmental impacts resulting from access to a pit by wildlife, migratory birds, domestic animals, or members of the general public, the AO will require operators to install fencing and/or other deterrents necessary to preclude access to pits.

i. Fencing on one side of the pit may be temporarily laid down or removed during active drilling, completion, or workover operations. All four sides will be fenced upon release of the rig or equipment.
ii. Other deterrents to preclude pit access may include screening and/or netting. Flagging is not considered an effective deterrent. The BLM will avoid prescribing specific deterrents to the operator (performance-based), but should notify the operator that failure to adequately preclude access may result in violations and/or penalties.
iii. As described in Section 3(h) of this policy, pits containing oil or hazardous substances must sufficiently preclude entry by wildlife, livestock, or members of the general public. Onshore Oil and Gas Order No. 7, Section III.E.1.c., requires that all pits under purview of the Order

be secured to prevent entry by livestock, wildlife, or unauthorized personnel.

b. Only wastes that qualify for the E&P exemption under RCRA can be disposed of in on-site facilities, when approved by the AO. All non-exempted wastes must be removed from the location and recycled or used in accordance with the State of Utah rules and regulations.

c. Use of oil-base muds

   i. The mixing or co-mingling of oil-base mud and water-base mud cuttings is prohibited.
   ii. All oil-base mud cuttings pits shall be lined with a synthetic liner at least 20 mils thick and be in accordance with requirements in 2(d)(iii). Pits or trenches used for the disposal of oil-base muds and/or contaminated cuttings shall be solidified in accordance with this BLM/UDOGM policy, see Attachment 6.
   iii. The use of a semi- or closed-loop system may be required when using oil-base muds in sensitive areas or on pads with limited space.
   iv. The operator must provide the AO a contingency plan for response to accidental discharge of oil-base mud or cuttings into the reserve pit.

d. Dependent upon the chemical composition of substances used for drilling, completion or workover operations, the AO may require that a separate completion pit, or temporary storage tanks, be used for materials flowed back during downhole activities, including hydraulic fracturing operations. Flowback of fluids other than fresh and/or produced water to the reserve pit is prohibited in sensitive areas, except in those rare instances when an exception is granted to Section 2(a).

e. Transfers of wastes from Federal oil and gas leases

   i. <u>To BLM-administered surface estate</u> - To encourage and promote waste minimization, operators may propose plans for managing and transporting E&P waste through beneficial use, reuse, or recycling by submitting a waste management plan for approval through a Sundry Notice and/or Right-of-Way. Such plans shall describe, at a minimum, the type(s) of waste, origin and final disposition of the waste, the proposed use and/or treatment of the waste, the transportation route, and shall include a copy of any certification or authorization that may be required by other laws and regulations.
   ii. <u>To non-federal lands</u> - Transport of wastes to a non-federal location is only allowed with the BLM's prior written approval and when the wastes are transported to an authorized commercial disposal or treatment facility. Subsequent submission of manifests or weigh tickets will be required.

f. Recycling and reuse of wastes generated on E&P locations

    i. Treatment of wastes (e.g., fracture stimulation fluids, drilling fluids, drilling solids, produced water, etc.) must be approved in writing by the AO, and the operator must obtain permits required by other federal, state (see R649-9), or local government agencies prior to treatment or use.
    ii. Produced water must be tested prior to use for dust abatement and authorized in writing by the AO prior to road application. A copy of any applicable State of Utah DEQ surface discharge permits and test results showing trace elements, metals, salinity, pH, cations, and anions must be provided to the AO.
    iii. Recycling and reuse of wastes must comply with the transfer policy in Section 3(e) of this IM.

g. Emergency operations

    i. Permanent Emergency Pits
        1. Standards for permanent emergency pits are provided in Onshore Oil and Gas Order No. 7, Section III.D.3. Alternatives to permanent pits, such as tanks, should be considered whenever possible.
    ii. Temporary emergency pits
        1. The operator must verbally notify the AO within 24 hours of the construction and use of temporary emergency pits and provide the BLM with the anticipated timeline for the pit's use and subsequent closure.
        2. Following emergency operations, the BLM AO shall be provided a summary of the event by Sundry Notice (including NTL-3A notifications, if necessary), including identification of wastes generated and disposed of into the emergency pits and actions taken by the operator. This Sundry must be submitted no later than 15 days following the emergency actions. Disposal of wastes generated by emergency operations must be in accordance with federal, state, and local rules and regulations, and described in the summary report. A procedure to close and reclaim the emergency pit must then be submitted to the AO for approval.

h. Monitoring, inspection, and enforcement

    i. Oil or hazardous substances in pits. The regulations at 43 CFR §3162.7-1(b) state that produced oil is not permitted to go in a pit without the approval of the AO. In addition, Onshore Oil and Gas Order No. 7, Section III.F.8., requires that pits be kept reasonably free from surface accumulation of liquid hydrocarbons that would retard evaporation.

1. The BLM requires that operators remove oil found in pits as soon as possible, but no later than 48 hours from discovery. Any accumulation of oil in a pit shall be promptly removed.
2. The BLM requires operators to take measures to minimize or preclude recurring releases of oil into the pits.
3. The BLM requires that operators ensure effective deterrence is present to preclude entry by wildlife, livestock and the public to pits.

ii. The AO has the authority to require testing and reporting of pit contents to ensure regulatory compliance. Pit testing guidance is provided in Attachment 4, Pit Closure Sampling and Analytical Testing Procedures.

iii. The operator is required to regularly monitor and inspect pit liners for integrity. The AO may require that a pit be closed if the liner integrity is compromised, or may order the pit capacity reduced so that the operator can repair the liner.

iv. The BLM requires the operator to monitor and evaluate the effectiveness of fencing and any other required deterrents to animals and humans. The BLM will immediately notify the U.S. Fish and Wildlife Service if a dead or injured bird is found in a pit, if the operator fails to provide such notification. The BLM requires operators to notify the BLM if wildlife (other than insects and other invertebrates) or livestock are discovered in a pit.

v. If illegal trespass dumping of waste into pits is found, the BLM will immediately contact the BLM Law Enforcement Officer. Such wastes must be removed from the pits by the responsible party or operator and transported to an authorized disposal facility.

vi. If freeboard is exceeded, the BLM requires the operator to immediately lower the pit volume to provide acceptable freeboard.

vii. Notification of any releases from pits must be provided to the BLM's AO, including adherence to applicable NTL-3A requirements.

4. *Closure and reclamation of pits.* Additional closure guidance is provided by UDOGM in the Environmental Handbook, Version 1.0, pgs. 26-30.

a. Fluid removal from pits

i. Squeezing of pits is prohibited. Removal of free-standing fluids is required prior to mixing in clean spoils, provided:
1. Pit contents remain in the pit and liner integrity is effectively maintained,
2. The closed pit contents are in a sufficient condition to provide adequate surface stability and prevent settling of the pit, and
3. The transport of fluids removed from the pit complies with Section 3(e) of this policy.

ii. Any measurable quantity of oil must be removed from the pit surface prior to closure; burning of hydrocarbons is prohibited.

iii. Roadspreading or landfarming of wastes requires prior written approval by the UDOGM or BLM AO. Testing of the wastes prior to spreading is required. If roadspreading or landfarming of wastes is proposed on split-estate, the operator must provide the surface landowner's written approval to the AO prior to authorization.

b. Muds, cuttings, cement, and synthetic pit liners (if present) must be covered by a minimum of 3 feet of clean fill. Alternatively, transport of these materials off-site must comply with Section 3(e) of this policy. Oil-base muds and cuttings must be solidified in accordance with Section 4(e)(ii) of this policy, see Attachment 6 for requirements.

c. In accordance with Onshore Oil and Gas Order No. 7, wastes generated during emergency operations shall be emptied from emergency pits and the liquids disposed of in accordance with applicable state and/or federal regulations within 48 hours following its use, unless such time is extended by the AO.

d. Wastes not exempt under RCRA are prohibited from entering pits. Synthetic liners must be cut to the level of pit solids before backfilling, unless the liner is to be folded over to encapsulate the pit contents. Portions of the liner cut away must either be placed over the stabilized waste and covered with a minimum of three feet of clean cover, incorporated into the solidified matrix, or be disposed of in a sanitary landfill. Produced fluids or oil contaminated soil may be disposed of in a UDOGM-approved facility. Burning of non-exempted wastes will not be allowed. (http://oilgas.ogm.utah.gov/Publications/Publications.htm).

e. The use of mechanical treatments, solidification, or stabilization requires prior written approval by the AO.

i. When using sprinklers or misters to hasten pit evaporation, operators shall ensure pit contents are not deposited outside the pool area of the pit.
ii. Prior to pit solidification or stabilization a pit closure plan must be submitted to, and approved by, the AO. Requirements for the pit closure plan and closure report are detailed in Attachment 6. A variance from solidification requirements may be approved by the AO if proposed mitigation measures, such as a 'capillary barrier' being placed over highly saline waste to prevent upward migration of salts.
iii. After solidification the burial of the waste mixture will be approved if the waste contains less than 10 mg/L leachable oil and less than 5,000 mg/L leachable dissolved solids, utilizing the Utah Modified Leachate Test (see Attachment 4). A closure report must be approved by the AO prior to release of operator liability. For elevated contaminant concentrations (TPH $\geq$ 18,000 mg/kg or TDS > 30,000 mg/L) only one treatment method will be required, either solidification **or** offsite disposal.
iv. The use of fly-ash as a pozzolan in solidification is permitted. However, the use of fly-ash in stabilization to absorb free standing liquids (which

may results in the addition of heavy metals to the waste) is prohibited. Use of alternative absorbent materials for stabilization is recommended, such as clean soils from onsite or offsite, which must be described in the closure plan and approved by the AO.

f. When closure of previously approved pits located in sensitive areas is proposed, the BLM requires that the pit contents be tested prior to closure. The Pit Lining and Cleanup Criteria spreadsheet, located in Attachment 5, will be used to determine clean-up criteria for pit contents in sensitive areas (See Level II Sensitivity). The operator will be required to meet the standards determined by the AO, or may be required to remove and dispose of the pit contents at an authorized disposal facility.

g. Timing of pit closure

   i. Operators are required to submit written notification to the appropriate BLM field office or UDOGM AO, including closure plan for solidification of oil-base mud or oily waste. The closure plan must be approved prior to commencement of closure activities.
   ii. Reserve pits must be closed as soon as practical and no later than 6 months on BLM-managed sites (OOGO No. 1, XII., Abandonment) and up to one year on UDOGM-managed sites after the last well on the pad is drilled. Variances from closure timing requirements in this policy are allowed only with sufficient justification and prior written approval from the AO.
   iii. Completion and flare pits will be closed as soon as practical, but no later than 6 months from the end of completion operations (BLM) or one year (UDOGM), unless a flare pit is needed to reduce fugitive emissions due to lack of capture potential.
   iv. Temporary emergency pits require prior closure approval by the AO, 3(g)(ii)(2). Temporary emergency pits must be closed as soon as practical.

h. Testing requirements for pit closure

   i. Pits requiring testing are those that exhibit visible contamination or odors, use oil or salt based drilling muds, have penetrated a salt diapir or chloride-laden zones such as the Paradox Formation, Arapien Shale, or Preuess Formation. Sampling may also be required by APD permit documentation or supporting NEPA/RMP information. A statistical representation of reserve pits within developed fields (in-fill drilling) should be sampled for regulatory assessment and compliance purposes.
   ii. Testing of waste constituent concentrations, submittal of analytical results and written approval is required prior to road spreading or landfarming of wastes.

iii. Closure/solidification of oil-base mud pits must be conducted in accordance with applicable BLM or UDOGM requirements, rules or regulations, see Attachment 6.
iv. Testing may be required by the AO prior to closure of emergency pits, depending upon the contents discharged to the pit, integrity of liner, or visible signs of contamination.
v. Production pits will be tested in accordance with the guidance provided in Attachment 4.
vi. Testing of reserve pits prior to closure will be required by the AO for instances where pit closures occur in sensitive areas, locations where the pit was unlined or the liner integrity was compromised, at single pits that service multiple wells, where oily waste is visible or odors present, where salt-laden formations may have contributed elevated chlorides to cuttings, or where illegal dumping is suspected.

i. Cleanup levels, contaminant thresholds and closure requirements

i. Assessment of analytical testing results will determine the selection of closure options, utilizing Attachment 5 (Sheet 2), Utah BLM/UDOGM Contaminated Soil Remediation Ranking Assessment. For Level II Sensitivity a TPH above 18,000 mg/kg or for an EC < 4 mmho/cm (≈2,560 mg/L TDS), ESP < 15%, or SAR < 12 the waste will be required to be solidified or transported to an approved disposal facility. If background soil characteristics show poorer salinity values than depicted by these inorganic limits then these limits may be exceeded on approval by the AO.
ii. For Level I Sensitivity (< 18,000 mg/kg TPH or inorganic characteristics below ≈ 35,000 mg/L TDS (EC ≤ 15 mmho/cm)) the waste can be buried onsite with stabilization, see Attachments 4 (Tier 2 risk-based screening levels). Waste exhibiting ≥ 18,000 mg/kg TPH or an EC ≥ 15 mmho/cm within Level I Sensitivity areas, may be buried onsite, but if potential resource impacts are likely then solidification or removal will be required, see Attachment 6.

j. Reclamation requirements

i. Reclamation of the disturbed surface must comply with a BLM Reclamation Policy (i.e. Green River District Reclamation Guidelines, etc.), and/or other site-specific requirements approved in the APD.
ii. Reclamation activities must protect the effective integrity of the liner unless the pit is solidified or stabilized in accordance with this policy.

k. Bioremediation

i. Onsite bioremediation of suitable wastes is encouraged wherever feasible and practical. Refer to BLM Washington Office (WO) IM 1999-061 or UDOGM Environmental Handbook, page 30.

l. Landfarming

i. Transfer of drilling mud to UDOGM-approved landfarms is prohibited, see UDOGM's March 24, 2009 Notice to Oil & Gas and Disposal Facility Operators, Re: Drilling Mud. This Notice has been clarified and reiterated with an October 18, 2012 Notice located on UDOGM's website. (http://oilgas.ogm.utah.gov/Notices/Notices.htm). If the waste it is to be applied to the land surface after successful bioremediation elevated salinity may adversely impact vegetation and/or soil chemistry and would not be approved.

m. Monitoring, inspection, and enforcement

i. The operator must frequently inspect sprinklers or misters during operation to ensure proper functioning and to prevent drift of fluids outside of the pit. Operations shall be suspended when wind speeds result in unacceptable drifting of fluids.
ii. The operator must inspect the liner throughout the course of operations, and prior to closure, to ensure that liner integrity has not been compromised.
iii. The BLM or UDOGM may elect to be present during sampling of pit contents. The operator must notify the AO at least 72 hours in advance of sampling to provide the BLM or UDOGM opportunity to be present.
iv. If non-RCRA exempt waste is found in pits, all waste in the pits must be removed and transported to a RCRA subtitle C authorized commercial disposal or treatment facility.
v. When liner integrity is compromised in production pits, the AO may require that the operator determine the extent of contamination/infiltration below the liner.

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